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Brent J. Bollman

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JOSHUA D. ISEBERG  
JDI PATENT  
809 CORPORATE WAY  
FREMONT, CA 94539

EXAMINER

GAMBETTA, KELLY M

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/719,040	<b>Applicant(s)</b> BOLLMAN ET AL.	
	<b>Examiner</b> KELLY GAMBETTA	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16, 18, 20-22 and 24-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-22 and 24 is/are allowed.
- 6) ☒ Claim(s) 1-16, 18 and 25-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 9 March 2009 have been fully considered but they are not persuasive. The applicant argues that Furendal does not teach that the film is rendered insoluble by only the solvent, but that chemical cross linking causes the insolubility. However, the solvent causes this cross-linking. Similarly, the present claims indicate that the solvent anneals the film and it is the annealing that actually causes the insolubility. In either method, it is the solvent that causes the process that renders the film insoluble. Therefore this argument is not convincing. Further, the applicant argues that the solvent resistance in Furendal is not only attributed to the solvent but also to heat or catalyst induced cross linking. However, claim 1 as written does not exclude using a catalyst or heat treatment. Resulting directly from exposure to vapor does not exclude that it may result directly from exposure to vapor and catalytic activity or heat treatment. Further, one of ordinary skill in the art would recognize that a catalyst is only present in a reaction to lower the activation energy and allow the reaction to occur. Therefore, the cross-linking or annealing is attributed directly to the solvent, the catalyst or heat is merely just giving it the energy needed to work. The applicant further argues that the coating is soluble in the solvent before annealing in Furendal. However, the claims also do not exclude this feature, only that the film becomes insoluble after annealing. This occurs in Furendal as discussed in previous office actions and below.

Regarding the rejection of claim 10, the applicant requests evidence for official notice. However, the examiner is not taking official notice for the solvent choice in Furendal. Furendal discloses in column 12 lines 33-50 that the solvent used to anneal the film may be a variety of solvents with a preferred boiling point of 35-120°C. The solvent used to dissolve the polymer in the Examples certainly fits into these boiling points as well. Furendal already broadly includes these solvents in his criteria of useful solvents. Therefore it would have been obvious to use the same solvent to dissolve as well as anneal the polymer, seeing as they fit the same criteria as given by Furendal and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Further, *KSR V. Teleflex* teaches that a person of ordinary skill in the art would have a finite set of solvents to pick from, those that have a boiling point of 35-120°C. Picking the same two solvents to serve both functions simplifies the process and prevents cross-contamination and would be the product of ordinary skill of the art and common sense. See *KSR International Co. v. Teleflex Inc.*, 550 U.S.--, 82 USPQ2d 1385 (2007)

The applicant further argues that rendering the film insoluble would be contrary to the purpose of Furendal. However, as discussed below, Furendal cross links a polymer using a solvent which renders the film insoluble in the solvent. Though Furendal may teach other embodiments, it does not negate the other disclosures of Furendal as further discussed below and in previous actions.

Therefore, for at least these reasons, the rejections of the previous office action are maintained. New grounds of rejection appear below due to amendments.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-16, 18 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furendal et al.

Regarding claim 1, Furendal et al. discloses a method for annealing an organic film, comprising exposing the organic film to a vapor of a solvent for a period of time sufficient to render at least the outermost portion of the organic film insoluble in the solvent (abstract, column 8 lines 11-65, examples for solvent-only annealing). , Furendal teaches the film insoluble in the same solvent in column 8 lines 11-65, in fact, discloses that the film is insoluble to solvents and resists solvents in general, which would certainly include the solvent used to anneal the film. Furendal also teaches the organic film dissolvable by the same solvent before annealing or cross linking as follows. Furendal discloses in column 12 lines 33-50 that the solvent used to anneal the film may be a variety of solvents with a preferred boiling point of 35-120°C. The solvent used to dissolve the polymer in the Examples certainly fits into these boiling points as well. Therefore it would have been obvious to use the same solvent to dissolve as well as anneal the polymer, seeing as they fit the same criteria as given by Furendal and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Also, the limitation of using the same solvent for dissolving the polymer, as well as annealing or cross-linking the polymer, would have been obvious because “a person of ordinary skill has good reason to pursue the known options with his or her technical grasp. If this leads to the anticipated

success, it is likely the product not of innovation but of ordinary skill and common sense.” A person of ordinary skill in the art would have a finite set of solvents to pick from, those that have a boiling point of 35-120°C. Picking the same two solvents to serve both functions simplifies the process and prevents cross-contamination and would be the product of ordinary skill of the art and common sense. See *KSR International Co. v. Teleflex Inc.*, 550 U.S.--, 82 USPQ2d 1385 (2007).

Regarding claims 2-3, the film is a polymer film (column 2 lines 21-40).

Regarding claims 4-7, the many type of polymers that may be used in the invention are disclosed in column 6 line 47 – column 8 line 11.

Regarding claims 8-9, the possible organic solvents are disclosed in column 12 line 55 – column 15 line 15.

Regarding claim 10, Furendal et al. discloses a method for forming an organic film, comprising dipping and evaporating a polymer solution (columns 11 and 12 et seq.) to form the organic layer, then exposing the organic layer to a vapor of a solvent for a period of time sufficient to render at least the outermost portion of the organic film insoluble in the solvent (abstract, column 8 lines 11-65, examples for solvent-only annealing). Furendal also teaches the organic film dissolvable by the same solvent before annealing or cross linking as follows. Furendal discloses in column 12 lines 33-50 that the solvent used to anneal the film may be a variety of solvents with a preferred boiling point of 35-120°C. The solvent used to dissolve the polymer in the Examples certainly fits into these boiling points as well. Therefore it would have been obvious to use the same solvent to dissolve as well as anneal the polymer, seeing as they fit the

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same criteria as given by Furendal and since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Also, the limitation of using the same solvent for dissolving the polymer, as well as annealing or cross-linking the polymer, would have been obvious because “a person of ordinary skill has good reason to pursue the known options with his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.” A person of ordinary skill in the art would have a finite set of solvents to pick from, those that have a boiling point of 35-120°C. Picking the same two solvents to serve both functions simplifies the process and prevents cross-contamination and would be the product of ordinary skill of the art and common sense. See *KSR International Co. v. Teleflex Inc.*, 550 U.S.--, 82 USPQ2d 1385 (2007).

Regarding claim 11, the film is a polymer film (column 2 lines 21-40).

Regarding claims 12-14, the many type of polymers that may be used in the invention are disclosed in column 6 line 47 – column 8 line 11.

Regarding claims 15-16, the possible organic solvents are disclosed in column 12 line 55 – column 15 line 15.

As to claim 18, Furendal et al. is described above and does not include specific organic solvents for the polymer material to make the film, just that the solvent may be an inert volatile molecule. Furendal et al. does teach inert volatile molecules for use as the second solvent in 12 line 55 – column 15 line 15 that includes chloroform (column 14 ~line 42). It would have been obvious to one of ordinary skill in the art at the time of

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the invention to use a small organic molecule such as chloroform, making both of the solvents the same as required in claims 17-18, or any other small organic molecule making the solvents different as required by claim 19, as Furendal et al. implicitly recognizes the inherent suitability of doing such. In addition, one of ordinary skill in the art would recognize that choice of a solvent to form the film would depend upon the film desired to be formed, thus solvent choice is a result effective variable and its modification is not inventive. Therefore, it would have been obvious to one of ordinary skill in the art to modify Furendal to use chloroform to form its films instead of water due to the nature of the polymer deposited and by routine experimentation, absent evidence showing a criticality for the claimed solvent.

Regarding claim 25, Furendal teaches that a catalyst may be used with the solvent to cross link the film, therefore alleviating the need to heat to anneal the film and solvent (column 8 lines 63-65). Furendal teaches film formation is aided with or without heat while using the solvent in column 11 lines 60-65 and the technical arrangements of the process may be modified to optimize heat economy in column 12 lines 16-31. In addition, the heat of Furendal is used to help dry the solvent after the solvent treatment, not during annealing, and the cross linking occurs at lower temperatures which may not require heating in column 15 lines 19-45.

As to claim 26, this limitation is met by Furendal as discussed above.

As to claim 27, Furendal teaches that a catalyst may be used with the solvent to cross link the film, therefore alleviating the need to heat to anneal the film and solvent (column 8 lines 63-65). Furendal teaches film formation is aided with or without heat

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while using the solvent in column 11 lines 60-65 and the technical arrangements of the process may be modified to optimize heat economy in column 12 lines 16-31. In addition, the heat of Furendal is used to help dry the solvent after the solvent treatment, not during annealing, and the cross linking occurs at lower temperatures which may not require heating in column 15 lines 19-45.

### ***Allowable Subject Matter***

Claims 20-22 and 24 are allowed for reasons discussed in the previous office actions.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KELLY GAMBETTA whose telephone number is (571)272-2668. The examiner can normally be reached on Monday - Thursday 7:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kelly Gambetta  
Examiner  
Art Unit 1792

kmg

/Timothy H Meeks/

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Supervisory Patent Examiner, Art Unit 1792